5.5 p278 36-41

(36) -6 (37) 8 (38) cd^3

(39) (x^4-3) (40) $512+x^2$ (41) $2m^2$

5.6 p838 2, 4, 6, 14, 18, 22, 24, 30

(2) $7\sqrt{12} = 7\cdot 2\sqrt{3} = \boxed{14\sqrt{3}}$ (4) $\sqrt{5r^6} = \boxed{r^2\sqrt{5r}}$

(6) $9\sqrt{5}$ (14) $(5+\sqrt{2})(3+\sqrt{3})$

$\boxed{15+5\sqrt{3}+3\sqrt{2}+\sqrt{6}}$

(18) $(\sqrt{8}+\sqrt{13})^2$

$8+2\sqrt{8\cdot 13}+13$

$\boxed{21+4\sqrt{26}}$

(22) $\dfrac{\sqrt{18}}{\sqrt{32}} = \sqrt{\dfrac{18}{32}} = \sqrt{\dfrac{9}{16}} = \boxed{\dfrac{3}{4}}$

(24) $\sqrt[3]{\dfrac{4}{7}} = \dfrac{\sqrt[3]{4}}{\sqrt[3]{7}}\cdot\dfrac{\sqrt[3]{7^2}}{\sqrt[3]{7^2}} = \dfrac{\sqrt[3]{4\cdot 49}}{7} = \boxed{\dfrac{\sqrt[3]{196}}{7}}$

(30) $\dfrac{1-\sqrt{3}}{1+\sqrt{8}}\cdot\dfrac{1-\sqrt{8}}{1-\sqrt{8}} = \dfrac{1-\sqrt{8}-\sqrt{3}+\sqrt{24}}{-7} = \boxed{\dfrac{1-2\sqrt{2}-\sqrt{3}+2\sqrt{6}}{-7}}$

OR

$\boxed{\dfrac{-1+2\sqrt{2}+\sqrt{3}-2\sqrt{6}}{7}}$

5.8 2, 3, 8, 13

(2) $\sqrt{z+3} = 7$

$z+3 = 49$

$z = 46$ ✓

(3) $\sqrt[3]{a+5} = 1$

$a+5 = 1$

$a = -4$ ✓

(8) $\sqrt{x-8} = \sqrt{13+x}$

$x-8 = 13+x$

$\varnothing$

(13) $\sqrt{5y+4} > 8$

$5y+4 > 64$

$5y > 60$

$y > 12$ $y \geq -\frac{4}{5}$

5.7 1, 3, 5, 6, 17, 20, 21, 24, 27-29

1. $\sqrt[3]{10}$ 3. $\sqrt[3]{a^2}$ 5. $35^{1/2}$ 6. $32^{1/4}$ or $2^{5/4}$

17. $7^{5/9} \cdot 7^{4/9} = 7^{9/9} = \boxed{7}$ 20. $x^{2/5} \cdot x^{8/5} = x^{10/5} = \boxed{x^2}$

21. $m^{2/3} \cdot m^{4/5} = m^{6/5} = \boxed{m\sqrt[5]{m}}$ 24. $\frac{7^{3/4}}{7^{2/3}}$ $7^{\frac{9}{12} - \frac{20}{12}}$ $7^{-11/12} =$

$\frac{1}{\sqrt[12]{7^{11}}} \cdot \frac{\sqrt[12]{7}}{\sqrt[12]{7}} = \boxed{\frac{\sqrt[12]{7}}{7}}$

27. $\frac{r}{r^{2/5}} \div \frac{1}{r^{2/5}} = \frac{1}{\sqrt[5]{r^2}} \cdot \frac{\sqrt[5]{r^3}}{\sqrt[5]{r^3}} = \boxed{\frac{\sqrt[5]{r^3}}{r}}$

28. $\sqrt[4]{36} = \sqrt{\sqrt{36}} = \boxed{\sqrt{6}}$ 29. $\sqrt[4]{9a^2} = \sqrt{\sqrt{9a^2}} = \sqrt{3a}$

5.9 1, 2, 4, 8, 10, 18, 19

1. $\sqrt{-289} = \boxed{17i}$ 2. $\sqrt{\frac{-25}{121}} = \boxed{\frac{5i}{11}}$ 4. $\sqrt{-\frac{28t^6}{27s^5}} = \frac{2it^3\sqrt{7}}{3s^2\sqrt{3s}}$

$\frac{2it^3\sqrt{7}}{3s^2\sqrt{3s}} \cdot \frac{\sqrt{3s}}{\sqrt{3s}} = \boxed{\frac{2it^3\sqrt{21s}}{9s^3}}$

8. $-i^{22}$

$-(i^2)^{11}$

$-(-1) = \boxed{1}$

10. $(14-5i) + (-8+19i)$

$\boxed{6+14i}$

18. $\frac{3-7i}{5+4i} \cdot \frac{(5-4i)}{(5-4i)} = \frac{15-12i-35i+28i^2}{25-16i^2} = \boxed{\frac{-13-47i}{41}}$

19. $x^2 + 8 = 3$

$x^2 = -5$

$\boxed{x = \pm i\sqrt{5}}$